ARI Research Note 87-11

RESEARCH PLAN FOR THE EVALUATION OF THE REQUIREMENTS FOR THE EFFECTIVE INTEGRATION OF THE NATIONAL TRAINING CENTER AND HOME STATION TRAINING

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The research note presents a Test Concept for investigating the effective integration of unit home station and National Training Center (NTC) training.

At present, there is no Army-wide method to prepare for, and benefit from, NTC training. Since the training experience is an important part of a unit's overall training program, the Army must derive the greatest increase in readiness from this training that is possible. The Test Concept examined here

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20. Abstract(continued)

consists of comprehensive data collection on a unit's training program before and after it has been to the NTC. This permits a determination of activities related to NTC performance, as well as permitting methods to be specified for incorporating these activities into Home Station training. The final goal is a set of guidelines for effectively integrating Unit Home Station training and NTC training.

RESEARCH PLAN FOR THE EVALUATION OF THE REQUIREMENTS FOR EFFECTIVE INTEGRATION OF THE NATIONAL TRAINING CENTER AND HOME STATION TRAINING

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Purpose

The purpose of this document is to present a Test Concept Paper (TCATA, 1979) for the investigation of the effective integration of the National Training Center (NTC) with Home Station Training. The Test Concept Paper describes the issues inherent in this topic and provides a proposed set of procedures to address this. After review and revision by the appropriate Army authorities of the material, a detailed test plan can be developed for actual execution of the research.

Scope

Four primary tasks are involved in this effort:

1) Identify required data and develop data collection procedures for home station training.
2) Collect the required data
3) Analyze the data and compare it to unit NTC performance
4) Produce a report describing the procedures used and the results obtained.

Statement of the Problem

The NTC provides units a training opportunity that is unmatched in its challenge, scope, realism, and feedback. The high fidelity combat simulation allows units to fight as combined arms teams on an instrumented battlefield against an experienced opposing force that employs Soviet doctrine and tactics. Trained and experienced observer/controllers and the NTC Instrumentation System provide detailed feedback that allows immediate assessment of performance. Mission After Action Reviews provide immediate feedback to units on performance so they can adjust procedures and operate to correct deficiencies and improve performance. Given the fidelity of the NTC as a combat simulation and the richness of the NTC training experience as an assessment and action planning tool, and recognizing that the opportunity is available just once in an eighteen month period, units should be at a level of readiness that will enable them to derive maximum benefit from the NTC training. Their pre-NTC training should be such that they can cope successfully with the demanding scenarios and absorb and utilize the performance data. Following the NTC experience, units should be able to adjust training plans so that subsequent home station training activities correct deficiencies and build on strengths that were identified at the NTC. This training cycle is illustrated in Figure 1.

Thus the effective integration of NTC and home station training is reflected in an annual training plan and program that enables units to prepare fully for the NTC, perform optimally at the NTC and move to higher levels of readiness at home station following the NTC experience.

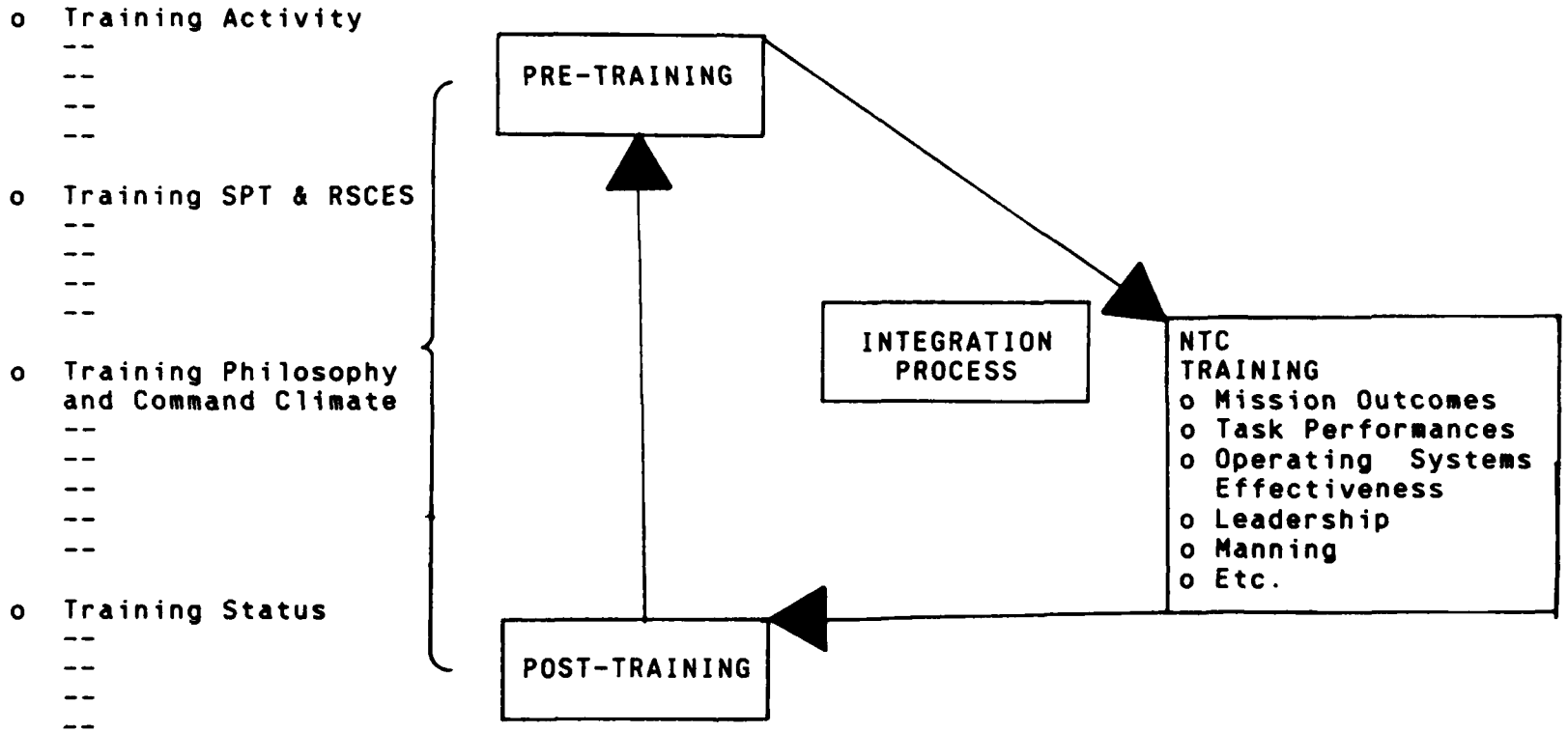

Figure 1. Integrating NTC and Home Station Training as a Programmic Approach to Learning

Currently, there are no models or guidelines to assist units in effectively integrating NTC and home station training. As a consequence, training at home station and performance at the NTC vary widely throughout the Army. Even more critical, there are no models or guidelines on how the unit and the division, working within the real constraints of training time and resources and other demands at Home Station can use the NTC feedback to sustain and improve the units and divisions Combat readiness. The problem is how to make the whole training system work, rather than just "peaking" for the NTC. A primary objective of this research effort, therefore, would be the development of products which would support fully integrated training programs.

Pre-training is critical to unit NTC performance because of the demanding standards required at the NTC while post-training furthers the unit's combat readiness by capitalizing on the NTC training experience. Therefore, the effective integration of the NTC and home station training must be an important Army goal which is vigorously pursued.

The research effort to be discussed here is designed to provide information concerning the effectiveness of the integration of NTC and home station training so as to maximize the training benefits derived from performance at the NTC. It is recognized that there are a myriad of home station activities that are independent of the NTC influence while there are others that are directly or indirectly involved with either preparing for or responding to the NTC experience. These latter activities would be the focus of this research effort.

Technical Approach

In conducting this investigation, NTC data would be linked with data sources at home station which describe a unit's training status just prior to NTC and again at some point in time following the NTC training. By observing NTC performance across battalions, noting strengths and weakness in performance, and comparing these observations with home station preparation, it could be possible to identify principal conditions and influences which would account for performance at NTC. A similar comparison of data collected at home station following NTC would be useful in determining the effect of NTC training on subsequent performance and readiness. These analyses would then be used to develop guidelines for units to use in developing fully integrated training programs which assure that the NTC training (Pre-NTC, NTC, and Post-NTC) contributes maximally to a units readiness posture.

The initial step will be the identification of units targeted for investigation. A total of four to six brigade rotations will be targeted for assessment; selection of brigade rotations will facilitate the gathering of data from more than one battalion per home station visit. This will provide a group of 8 to 12 battalions from which to build a data base. As this represents 20

- 35% of the active component (AC) heavy forces within FORSCOM, the data and trends developed should be indicative of the heavy forces in FORSCOM. Active selection of the target brigade rotations will be performed to derive a sample which constitutes a cross section of FORSCOM units. This procedure will insure that no bias is introduced toward any one post or installation during the investigation. Final selection of brigades will also be conditioned on availability, timing of NTC visits for brigades and resource requirements for visits.

The number of unit visits will be determined by home station approval/acceptance and resources. The minimum number of visits necessary to gather the required data is three. One visit will be made prior to the units deployment to the NTC (Pre-NTC Training) and one visit will be made after the units' redeployment from the NTC (Post-NTC Training). A visit to the unit during the actual NTC rotation is not considered necessary as the unit's performance can be reviewed and assessed through the performance data obtained directly from the NTC. The length of each visit will be approximately three to five days.

The focus of the home station data collection effort will be directed into five broad areas of training activities, training support and resources, training status, and training philosophy and command climate. Specific indicators in each of these areas are listed in Figure 2. These areas are proposed for data collection because they will provide insight into critical training activities and training related conditions.

As seen in Figure 2, data would be collected on unit training activities to provide information on how a unit structures its training activities, what training tasks it performs, the frequency of training on a particular task, where the emphasis of training is placed (individual, small unit, company, etc.) and on how a unit integrates training on areas found or identified as weak or deficient. Attention would also be given to how a task force integrates its Combat Support and Combat Service Support elements into its training program.

The data would also be collected in the areas of training support and resources to identify how a unit plans, forecasts and structures its training in relation to the resources available. This data would be critical in identifying the minimum necessary support and resources required to train a unit up to the level where it can gain the greatest benefit from the NTC.

In the area of training philosophy and command climate the data gathered would assist in the identification of the type of training environment in which a unit trains prior to going to the NTC and in which it integrates lessons from the NTC after returning from that training facility. The specific data identified for collection will include where the training emphasis is placed at each command level, how well the training guidance is interpreted and passed to each command level, the integration of

INSTALLATION/ORGANIZATION CLIMATE
(DIVISION/POST AND BRIGADE)

- o POLICIES: PERSONNEL, TRAINING, AND SUPPORT
- o GUIDANCE
- o GOALS/OBJECTIVES
- o PRIORITIES
- o MISSIONS
- o RESOURCES
- o METHOD OF ALLOCATING FACILITIES/AREAS

PERSONNEL

UNITS:

	PERCENT FILL	P-MOS MATCH	S-MOS MATCH	GRADE MATCH	TURNOVER RATE	TURB. RATE	PRES FOR DUTY
OFFICERS							
E8							
E5-E7							
E1-E4							

INDIVIDUALS:

	CIV GT EDUC	MIL EDUC	MOS QUAL	BTMS TNG	TRAIN TRNR	MOS ARMY PSN	MOSI QUAL	WPNC QUAL	WPN PT
OFFICERS									
E8									
E5-E7									
E1-E4									

FIGURE 2 POTENTIAL INDICATORS FOR HOME STATION DATA COLLECTION (CONTINUED)

TRAINING

- o General - Battalion/Company Level

  - Policy
  - Guidance
  - Goals Objectives
  - Priorities
  - Missions
  - Resources

- o Management - BN/CO/PLAT Leader Level

  - Knowledge/Expertise - FM 25-2/3
  - Long Range Plans
  - Unit Proficiency Evaluations
  - Short Range Plans
  - Training Schedules
  - Mission Training Plans
  - Training and Evaluation Plans
  - Task Lists

- o Activities - TF/CO/PLAT/SOD/CREW/IND.

	WHAT	WHEN	WHERE	HOW	WHO	DURATION	FREQ.	CONDITIONS
SOLDIER/LEADER	+ Initial		+ Multiechelon				+ Drills	
UNIT COLLECTIVE	+ Proficiency		+ Concurrent				+ AARs	
COMBINED ARMS	+ Sustainment		+ Opportunity				+ Doctrine	
Task Force								
BDE/DIV								

- o Evaluations

  - Type
  - Echelon
  - Frequency
  - Evaluating Unit
  - Results
  - Use

- o Attachment/Opcon Involvement

  - FSO/FIST
  - FOs
  - TACP/ALO
  - Trans./Maint.
  - Intel
  - ADA
  - Engineer
  - Medical
  - Chemical
  - Smoke
  - GSR

- o Other Mission/ Support Requirements

  - Post/ Division
  - Brigade
  - Battalion
  - Company

Figure 2 Potential Indicators for Home Station Data Collection (continued)

EQUIPMENT

- o Availability
  - Type/quanity on hand vs. auth.
  - Inventory
  - Hand receipts
  - Percent PLL lines at zero balance
- o Serviceability
  - Operational readiness rate
  - IG reports
  - MAIT reports
  - DA form 2404
  - Trained Maint. Personnel
- o Accountability
  - Number/ frequency of requisitions
  - Frequency/ severity of loss/ damage
- o New Items
  - Type/number
  - Time in unit
  - NET received
  - NET distributed
- o Compatability with NTC items
  - Vehicles
  - Weapons
  - Communications

FACILITIES AND LAND

- o Institution/ Garrison Facilities
  - Academies
  - Training Centers
  - Post/Div Schools
  - Learning Centers
  - Simulation Centers
  - TRAC
- o Local/Major Training Areas and Ranges
  - Type
  - Size
  - Location
  - Restrictions
  - Firing Points

Figure 2 Potential Indicators for Home Station Data Collection (continued)

FACILITIES AND LAND (CONTINUED)

- o TRAINING AIDS AND DEVICES
  - MILES/AGES
  - SIMULATIONS
  - VIS MOD KITS
  - ARTY/MTR OBSV FIRE TRAINER
  - REDEYE/STINGER MOVING TARGET
  - SIMULATORS
- o AIRFIELD/LANDING STRIPS

OTHER SUPPORT

- o FUNDS ALLOCATIONS/ EXPENDITURES
- o AMMO ALLOCATIONS/ EXPENDITURES
- o FUEL ALLOCATIONS/ EXPENDITURES
- o REPAIR PARTS ALLOCATIONS/ EXPENDITURES
- o FLYING HOUR ALLOCATIONS/ EXPENDITURES

FIGURE 2 POTENTIAL INDICATORS FOR HOME STATION DATA COLLECTION (CONTINUED)

live fire, simulation and force-on-force training to develop and sustain critical combat skills, unit evaluation procedures and structures, etc. The inclusion of this data will establish the nature of the environment in which a unit must train prior to going to, and sustain after returning from, the NTC.

The targeted areas for data collection are seen as the best initial point of departure for determining the effectiveness of the integration of NTC and Home Station Training. The areas identified have a high potential for providing the necessary information on training guidance, resources, support, tasks, evaluations, standards, assessments and feedback to meet the objective of the research effort. As the research effort progresses, modifications to this list of targeted areas, where deemed appropriate, will be made.

These data would be used to develop Pre- and Post-NTC profiles of units. The data profiles could then be used as a basis for the correlational analysis of performance at the NTC. The results of the analysis would enable researchers to establish linkages between prior conditions, outcome performance at the NTC and subsequent training efforts a home station following NTC.

To accomplish the above, four tasks are proposed. Each of these is described in detail below.

TASK 1 - Develop Required Measurement Instruments and Data Collection Procedures to Identify Essential Unit Home Station Pre & Post-NTC Training.

The initial step in producing the required measurement instruments would be the development of a model or concept for identifying the home station activities that are directly or indirectly related to the NTC in a pre- or post-paradigm. A logical approach to this task would be to investigate the systematic relationship between home station activities and NTC performance factors, i.e. performance on critical tasks (see Forsythe, 1985, for the discussion of the identification and measurment of NTC mission critical tasks.) The start point would be the NTC performance, followed by an investigation of the home station activities and influences that might be related to the NTC data. This effort would require an analysis of reference material on unit NTC performance, training, training strategy/ philosophy development and common training detractors and methods for reducing them. From these documents specific data would be identified for collection and the appropriate collection method would be determined.

Unit Training Activities. The reference sources for determining essential unit training activities would initially be reports on NTC performances such as Shackelford's (1985) "LESSONS FROM NTC", and studies on the live-fire (Forsythe and Doherty, 1985) and force-on-force (Nichols, 1985) performances which were based on data from the Take Home Packages. Additional analyses of

historical data may also be required in order to capture a sufficient number of performance factors from which related home station activities could be drawn. Subject matter experts and training materials (ie. SQTs, ARTEPs, AMTPs, How to Fight manuals, MILES manuals, etc.) would then be queried to identify those training activities which, based on the NTC performance factors, would be necessary to produce proficient units (Figure 3, Sample Training Task Identification Documents).

Training Support and Resources. This area would be covered by a variety of reference sources including training field manuals, ARTEPs, AMTPs, FC 25-19, "Training Detractors in FORSCOM Divisions and How They Are Handled". From these documents one could compare unit allocations and expenditures of critical resources used in the pre- and post-NTC programs with Army recommended standards required for specific training tasks (Figure 4, Sample Training Support/Resource Reference Document). In addition, data on ranges, training areas and utilization of remote training locations could be used to profile a unit's resources prior to its NTC rotation. These profiles would be useful in determining a unit's capability to support its training activities. Unit data could also be collected from training plans, ammunition allocations, fuel allocations, command operating budgets, and training management control system (TMCS), to further augment these profiles.

Training Philosophy and Command Climate. An approach that could be used in investigating this area of interest is to query the G-3 from each of the FORSCOM divisions as to their division policies concerning preparation for, and follow-up training on, the NTC rotation. For example, the 24th Mechanized Infantry Division has published its training guidance which directly affects NTC performance and experiences in a document brief "The Evolution of the Training Strategy in the 24th Mech". Such documents will be used primarily to develop the data required for collection in the training philosophy and command climate areas. Subject Matter Experts will research these documents to identify those critical areas (such as standardize to facilitate sustainment, accept training risks to keep focus at Co/Tm level and below, think by systems, MILES sustainment, ARTEP structure, modern target array, etc.) that are essential to developing a successful program of training to prepare task forces for the NTC. The critical or essential areas identified will be targeted for data collection.

TASK 2 - Collect the Required Data by Observations, Interviews, Questionnaires and Unit Historical Data

The actual performance and behavioral data from units would be collected in four ways: interviews, observations, questionnaires and analyses of specific unit historical data (training schedules, SOPs, Ammunition Allocations, etc.). Data related to training activities and training support/resources

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TRAINING AND EVALUATION OUTLINE

UNIT: Mechanized Infantry Company (with Carriers)/Tank Company/Company Team

MISSION: Move (3-V-1)

TASK	CONDITIONS	STANDARDS	REFERENCES
3-V-1-8 Conduct Tactical Movement.	The company/team is ordered to conduct cross-country tactical movement. The battalion TF OPORD includes: a. Battalion TF scheme of maneuver. b. Graphic control measures. c. Fire support plans and priorities.	The company/team: 1. Designates lead and following platoons. 2. Prescribes movement techniques to be employed by each platoon. 3. Moves on the prescribed axis, employing appropriate movement techniques, IAW tasks 9/10/11, below. 4. Maintains visual contact and mutual support between company/team elements. At night, vehicle commanders employ night vision goggles. 5. Controls movement by visual signals when out of contact, if possible. 6. Displaces organic mortars by bounds when contact is possible or expected. 7. Displaces the company/team trains by bounds when contact is possible or expected.	FM 71-1, chap 3, 4.
3-V-1-9 Move in Traveling.	OPFOR contact is not likely; speed is essential.	The company/team: 1. Moves on a column axis, maintaining visual contact between elements. 2. Subordinate elements all move in traveling. 3. Moves at the maximum safe speed (dependent on terrain and visibility) on a covered, concealed route. 4. Trailing elements may move in parallel columns to shorten company/team column and reaction time.	FM 71-1, chap 4.

Figure 3 Sampling Training Task Identification Documents

TRAINING AND EVALUATION OUTLINE

UNIT: Mechanized Infantry Company (with Carriers)/Tank Company/Company Team

MISSION: Move (3-V-1)

TASK	CONDITIONS	STANDARDS	REFERENCES
3-V-1-10 Move in Traveling Overwatch.	OPFOR contact is possible.	The company/team: 1. Lead platoon moves in traveling overwatch. 2. Trailing elements move on a column axis behind the lead platoon. Trailing elements move in traveling. 3. Lead vehicle of the trailing element maintains visual contact with the overwatch element of the lead platoon. 4. Lead element (a tank section or infantry squad) moves at the maximum safe speed (dependent on terrain and visibility) on a covered, concealed route. 5. Trailing elements move on covered, concealed routes. 6. Trailing elements may move in parallel columns to shorten company/team column and reaction time.	FM 71-1, chap 4.
	OPFOR engages the company/ team.	7. Reacts IAW Task 3-V-2-7, Mechanized Infantry Company (with Carriers)/Tank Company/Company Team--Take Action on Contact.	
3-V-1-11 Move in Bounding Overwatch.	OPFOR contact is expected.	The company/team: 1. Bounds by platoon. Bounding and overwatch elements and overwatch positions are designated. 2. Overwatch element (one or more platoons and heavy antitank weapons [HAW]) occupies the overwatch position, searches adjacent terrain, and reports when it is prepared to overwatch. 3. Bounding platoon, on order, moves on a covered, concealed route to the next overwatch	FM 71-1, chap 4.

Figure 3 Sampling Training Task Identification Documents (Continued)

TAB A TO MISSIONS 1, 2, AND 3 TO SECTION V TO CHAPTER 3
SUGGESTED SUPPORT REQUIREMENTS
MECHANIZED INFANTRY COMPANY (WITH CARRIERS)/TANK COMPANY/COMPANY TEAM:
MOVE (3-V-1)
ATTACK (3-V-2)
DEFEND (3-V-3)

1. Administration:

a. Train/evaluate the company/team:

(1) Throughout all battalion task force and larger unit internal and external training/evaluation exercises and FTXs.

(2) During local training area (LTA), MRA, and major training area (MTA) tactical problems designed to train tasks from the move, attack, and defend missions.

(3) Integrating appropriate tasks from the move mission into the attack and defend missions. All movement performed during the course of Missions 3-V-2/3, Mechanized Infantry Company (with Carriers)/Tank Company/Company Team--Attack/Defend, is trained/evaluated IAW Mission 3-V-1, Mechanized Infantry Company (with Carriers)/Tank Company/Company Team--Move.

(4) Integrating all general missions from section I and appropriate supplemental missions from chapter 4 into the company/team exercises.

b. Company/team training/evaluation exercises should be designed as follows:

(1) Move - conduct preparations and planning procedures in a motor pool or assembly area and conduct an inspection; then conduct a tactical road march or cross-country movement to a defensive position, forward assembly area, or LD. Quartering parties should operate on a real time basis.

(2) Attack - issue the company/team an OPORD to conduct a movement to contact or deliberate attack. Vary the planning time available to train/evaluate the flexibility of unit command control procedures. Each movement to contact should culminate in contact with different size OPFOR elements, compelling the unit to select and execute the course of action selected for training. Alternatively, the company/team may be assigned a follow-and-support mission and receive a FRAGO to conduct a hasty attack on terrain that the company/team chain of command has not seen.

(3) Defend - issue the company/team an OPORD to prepare battle positions in depth for defense or delay or prepare a strongpoint. The OPFOR attack may arrive at the conclusion of company/team preparations or at any time during preparation of the position. Alternatively, a FRAGO for rapid occupation and hasty defense of a battle position may be issued at any time during movement or offensive operations. In either case, each exercise (except a strongpoint defense) should include FRAGOs to move to prepared and unprepared battle positions. FRAGOs to counterattack should be issued to the company/team, as appropriate. The company/team should be subjected to at least one mounted or dismounted assault during each exercise. Liberal use of smoke and artillery simulators during the assault adds realistic command/control problems, which greatly enhance the value of the exercise.

Figure 4 Sample Training Support/Resource Reference Documents

c. Conduct at least one-third of the company/team training/evaluation exercises at night or during other periods of limited visibility. Most of the exercises should be conducted in MOPP 3 or 4.

2. Minimum Trainers/Evaluators:

a. Internal - battalion commander/S3.
b. External - one major, SC 11/12.

3. Opposing Force:

a. Movement to contact/hasty attack -
(1) An attacking reinforced motorized rifle or tank company.
OR
(2) A defending reinforced motorized rifle or tank platoon, behind a reconnaissance unit screen.
b. Deliberate attack - reinforced motorized rifle or tank company in prepared positions. (NOTE: The company/team attacks IAW the battalion task force scheme of maneuver and must utilize available assets to develop appropriate force ratios.)
c. Strongpoint defense - one attacking motorized rifle, tank, or dismounted infantry regiment.
d. Delay/defense - one attacking reinforced motorized rifle or tank battalion per echelon. (Two battalions in a breakthrough attack - regimental first echelon.)

4. Support Troops:

a. OPFOR controller (MILES).
b. Trainer/evaluator driver.

5. Vehicles/Communications:

a. M113A1 or M151A2 and a triple-net radio capability for trainer/evaluator.
b. M113A1 or M151A2 and a dual-net radio capability for OPFOR controller.

6. Maneuver Area:

a. Move - an area containing a suitable assembly area, a route for a 25-km road march, and a 3- to 5-km maneuver lane for cross-country tactical movement.
b. Attack -
(1) Movement to contact - an area 3-5 km wide by 8-10 km deep.
(2) Hasty attack - an area 2-3 km wide by 3-4 km deep.
(3) Deliberate attack -
(a) Shallow objective - 2-3 km wide by 3-4 km deep.
(b) Deep objective - 3-4 km wide by 8-10 km deep.
c. Defend -
(1) Strongpoint defense - an area 3-4 km wide by 3-5 km deep.
(2) Defense - an area 3-5 km wide by 6-8 km deep with at least two battle positions.

Figure 4 Sample Training Support/Resource Reference Documents (Continued)

(3) Delay - an area 5-7 km wide by 8-10 km deep with at least two subsequent delay lines.

7. Firing Area: A maneuver area that permits use of:

a. Smoke grenades and smokepots.
b. Riot control agent - CS.
c. Blank ammunition and antitank weapon effect signature simulator (ATWESS) devices.
d. Handheld flares, star clusters, tripflares, artillery simulators, and other pyrotechnics.

8. Training Aids, Devices, and Special Equipment:

a. MILES equipment for OPFOR and the trained/evaluated unit.
b. Hoffman devices (for tanks) and blank firing adapters for other weapons.

9. Ammunition: See appendix F.

10. Key References: FM 5-36, FM 6-20, FM 7-7, FM 21-40, FM 21-75, FM 71-1, FM 71-2, TC 71-4.

11. Tips for Trainers/Evaluators:

a. Develop scenarios that initially permit adequate time for preparations and planning. As proficiency increases, reduce the time available to the unit chain of command, eventually arriving at a scenario that features only "Execute - NOW" FRAGOs. Change the company/team's mission, while the unit is on the move, to develop flexibility.
b. Progress from unmasked daytime exercises through day-masked, night, and night-masked exercises.
c. Integrate section I missions into company/team exercises to completely develop the unit's combat potential. Include OPFOR EW, air, and NBC operations in all exercises.
d. Company/team exercises should include appropriate tasks from the following supplemental missions:
4-IV-1, Install a Hasty Protective Minefield
4-IV-2, Construct Obstacles
4-IV-3, Breach a Minefield
4-IV-4, Breach Obstacles
Engineer assets should be allocated to or withheld from the company/team, as appropriate, to suit the training objectives established.
e. A FIST must habitually accompany the company/team whenever it conducts training/evaluation exercises. If possible, the same FIST should accompany the company/team on each exercise.
f. Appropriate combat support assets (engineers, air defense, ground surveillance radars, etc.) are placed in support of the company/team, as necessary, to support the unit's operations.
g. MILES provides maneuver arms with the most realistic simulation of the combat environment during force-on-force collective training/evaluation exercises.

Figure 4 Sample Training Support/Resource Reference Documents (Continued)

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APPENDIX F
AMMUNITION
TABLE F-2

	GREN HAND RIOT CS 1, M7 SERIES (G963)	GREN HAND SML NC (G939) YELLOW (G946) VIOLET (G964) RED (G962) GREEN (G960)	FUZE GREN HAND PRAC (G978)	SMOKE POT HC GROUND TYPE (G368)	CTG BALL 5.56-MM (A071) (PER RIFLE)	CTG TR 5.56-MM (A068) (PER RIFLE)	CTG BALL 7.62-MM TR 4-1 MLB (A131)	CTG BALL CAL .50 TR 4-1 MLB M8 (A529) M8	CTG BALL CAL .50 TR4-1 MLB (M2) (A557) M2	CTG BALL CAL .45 (A475)	CTG 40-MM WHITE STAR PRCHT (B536) CLUSTER (B536)	CTG PRAC 40-MM (B577)	SUBCALIBER, TANK (SEE FM 17-12-7)	CTG TPDS-T 105-MM GUN (C520)	CTG HEAT-TP-T 105-MM GUN (C511)	CTG SUBCAL 22MM PRAC CHG 1 M744 (A580) 2 M745 (A581) 3 M746 (A582) 4 M747 (A583)	81MM HE (C284)	81MM WP (C230/C231/C276)	81MM ILLUM (C226)	107MM HE (C704)	107MM WP (C708)	107MM ILLUM (C706)	BLAST SIMULATOR (TOW) (2566)	ROCKET PRACTICE 35-MM SUBCAL (LAW) (H706)	SIGNAL GROUND GREEN STAR CLUSTER (L314), GREEN STAR PRCHT (L310), WHITE STAR CLUSTER (L316), WHITE STAR PRCHT (L312)	SIGNAL GROUND RED STAR CLUSTER (L306) RED STAR PRCHT (L311)	SIMULATOR PROJECTILE GROUND BURST (B84)	GUIDED MISSILE TOW PRACTICE (1021)	GUIDED MISSILE XM223 PRACTICE DRAGON (R869)	HOFFMAN CHARGE (L862)
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	aa	bb	cc	dd
UNIT OF ISSUE	EA	EA	EA	RD	RD	RD	RD	RD	RD	RD	RD	RD	EA	RD	RD	RD	RD	RD	RD	RD	RD	RD	RD	EA	EA	EA	EA	RD	RD	EA
3-II-6 FIRING PROFICIENCY EXERCISE (TANK CREW)	1						500	300		50			20	13	7					7		16	1		4	2	10			6
3-II-9 FIRING PROFICIENCY EXERCISE (CARRIER TEAM)	1	4			120	40	400		360		6	10					6		6				1	10	4	2			1	3
3-II-12 FIRING PROFICIENCY EXERCISE (MANEUVER TEAM)	1	4	4		120	40	600				6	10					6		3					10	4	2			1	3
3-II-15 FIRING PROFICIENCY EXERCISE (SCOUT CREW)	1	4			120	40	400		360		6	10								7		16	1	10	4	2		1	1	3
3-II-17 PROVIDE INDIRECT FIRE SUPPORT (81MM/107MM SQUAD)	1	4														30	30	5	3	30	5	5			4	2	6			
3-III-6 FIRING PROFICIENCY EXERCISE (MECH INFANTRY SQUAD)	2	4	4	1	120	40	600		360		6	16					6		6				1	12	8	2			1	4
3-III-9 FIRING PROFICIENCY EXERCISE (DISMOUNTED INFANTRY SQUAD)	2	4	4	1	120	40	600				6	16					6		3					10	4	2			1	3
3-III-15 FIRING PROFICIENCY EXERCISE (SCOUT SQUAD)	2	8		1	120	40	600		700		10	16								7		16	2	16	8	2		1	1	4
3-III-17 PROVIDE INDIRECT FIRE SUPPORT (81MM SECTION)	2	8		1												132	132	27	13							2	6			
3-IV-4 ATTACK (LIVE FIRE) (TANK PLATOON)	6						1500	600		250			20	4	16					7		12	4		8	2				4
3-IV-6 DEFEND (LIVE FIRE) (TANK PLATOON)	6						500	250					72	32	40					7		12	4		8	2	6			2
3-IV-9 ATTACK (LIVE FIRE) (MECH INFANTRY PLATOON)	6	8	20		120	40	1500		300		16	20					6			6			4	6	8	2	6		2	16
3-IV-10 DEFEND (LIVE FIRE) (MECH INFANTRY PLATOON)	6	8		1	120	40	1500		600		16	10					6			6			4	22	10	2	6		3	
3-IV-14 ATTACK (LIVE FIRE) (DISMOUNTED INFANTRY PLATOON)	6		20		120	40	1500				16	20					6			6				6	8	2	6		2	16
3-IV-15 DEFEND (LIVE FIRE) (DISMOUNTED INFANTRY PLATOON)	6			1	120	40	1500				16	10					6			6				22	10	2	6		3	
3-IV-19 PROVIDE INDIRECT FIRE SUPPORT (107MM PLATOON)	4	8		1			1500														143	36	17			2	6			

Figure 4 Sample Training Support/Resource Reference Documents (Continued)

would be gathered using unit historical data (Figure 5, Example Unit Training Schedule). Data concerning training philosophy and command climate would be gathered using structured interviews, observations, and questionnaires. Figure 6 presents a sampling plan for personnel targeted for interviews and questionnaires. As seen there, these will include key leaders and directors of the training effort (Post/Division Commanders, ADC for Training, Brigade/Battalion/ Company Commanders, Platoon/Squad Leaders, G3s/S3s, Brigade/Battalion XOs, Division/Brigade/ Battalion CSMs, etc.) Since the NTC realistically exercises a Battalion Task Force it may be necessary to expand the data collection effort to include those combat support and combat service support elements which directly support the Task Force as well as those in the Brigade slice. Data would be collected in the same manner for those elements as for the Task Force elements.

The required data would be collected in three distinct phases (Figure 7 Data Collection Time Line). The first phase would require a home station visit and should occur in the 1-2 month window prior to a unit's deployment to the NTC. The scheduling of the visit during this time frame should find the unit well into its program of training up for the NTC. Unit training plans would be finalized, training support and resources would be forecasted and allocated, problem areas identified would have been refered to higher headquarters for resolution, and training would be conducted as required to reach the level necessary to gain the maximum benefit from the NTC. It is anticipated that 5-7 days would be required to conduct the necessary interviews, conduct observations, administer the questionnaires and gather the required historical data.

The second phase of the data collection effort would probably not require the research team's participation as all the necessary data would be collected as part of the unit's normal rotation at the NTC. The only requirement would be for the research team to coordinate with the Operations Group at the NTC to have the necessary data (Unit Take Home Packages, AAR tapes, radio tapes, etc.) sent to the ARI field unit in Monterey.

The last phase of the data collection effort would require a second home staton visit in the 6-9 month window after unit redeployment from the NTC. The timing of this visit would have allowed the unit to have finished the required redeployment activities (ie. maintenance activities, property acountability checks, compensatory time for personnel, etc.) It would also have allowed the unit leaders the opportunity to evaluate and assess the unit's performance at the NTC and how best to integrate those lessons into future unit training plans. It is again anticipated that the visit would require 5-7 days in which to conduct interviews, administer questionnaires and gather historical data.

UNIT TRAINING SCHEDULE	UNIT: CSC 2ⁿᵈ BN 4th AR	STATION:		FROM MONDAY, 10 MAR TO		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Monday 10 Mar 0700-0715	All	Formation	Co area	1SG	FM 22-5, unit SOP	Duty uniform
0715-0745	All	PT	Co area	HQ sec sgt	FM 21-20, Chap 4, para 4-6 to 4-13	10 rep and 2-mile run
0800-1700	Redeye sec	Move to site	Simulated site	Sec ldr	Unit SOP & bn LOI	Field uniform
0800-1000	All(-)	Prepare for field movement	Motorpool	Sqd/sec ldr	Co unit SOP	Preoperational vehicle check
1000-1130	All(-)	TAC rd march	Motorpool	Co cdr	Unit SOP, ARTEP 71-2: 3-IV-16-1; 3-IV-17-1, -2, -3	Tactical move to MRA; C ration lunch
1130-1600	All(-)	Sec tng	MRA	Sqd/sec ldr	ARTEP 71-2: 3-IV-18-1, -2, -3; 3-II-17-1, -2, -4, -5, -9, -10, -19; 4-II-2-1, -2, -3, -4	Sec/plt trains separately on known ARTEP task weaknesses
1630-1730	All	Supper	MRA	1SG		
1830-1930	All	Operator maint	AA	Sqd/sec ldr	Vehicle TMs	
1930-	Scout sec Mortar plt AVLB sec	Tactical night tng	MRA	Co cdr	T&E schedule FM 21-18 FM 17-1901/2 (071-333-6522) FM 7-1101 (071-333-6508, 051-226-0303, -0304, 051-225-0306)	T&E schedule activities after operation vehicle

Figure 5 Example Unit Training Schedule

Position	# Individuals	# Groups
Company Commander	8	2
Training NCO	8	2
1st SGT	8	2
Platoon Leader	12	4
Platoon Sergeant (3 each from 2 COs in each Battalion)	12	4
Squad/Crew Leader	12	2
Team LDR/Gunner (2 each from 3 plat in same 2 COs in each Battalion)	12	2
Soldiers (6 each from same 3 plat in same 2 COs in each Battalion)	36	6
OPFOR Company CDR	3	1
OPFOR Platoon LDR	6	1
OPFOR Platoon SGT	6	1
Totals:	123	27

Figure 6 Sample Data Collection Plan for Home Station Interviews

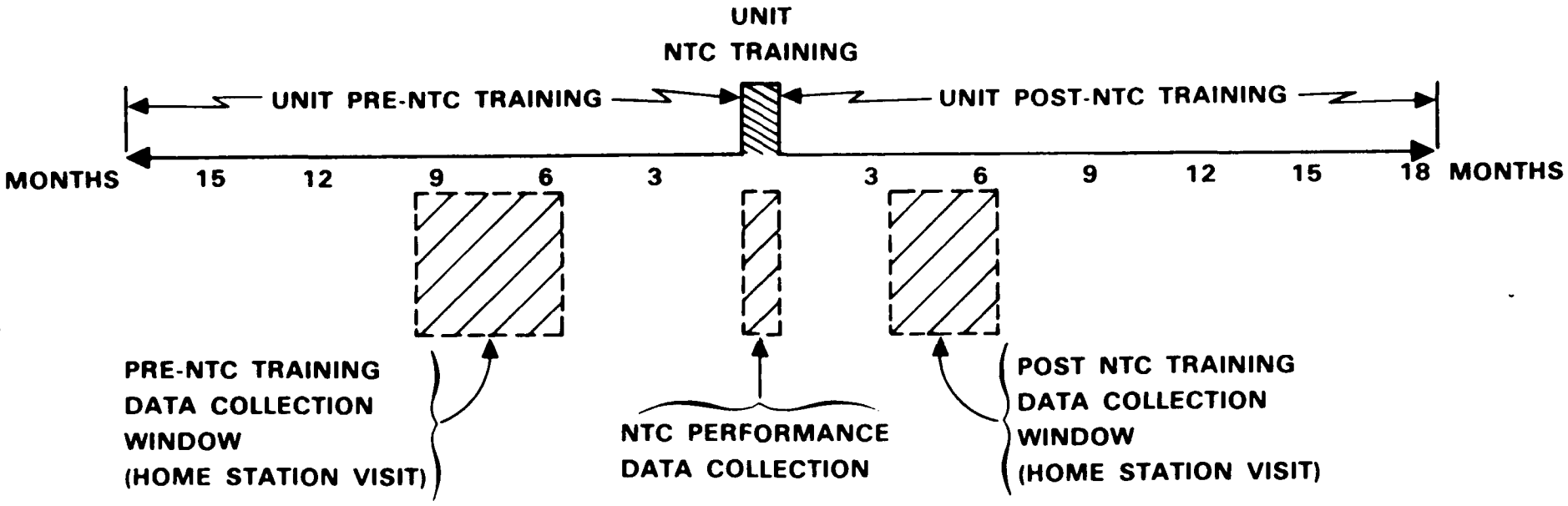

Figure 7 Data Collection Time Line

TASK 3 - Reduce and Analyze Data, Including Comparison With NTC Performance Data

The data gathered prior to the unit deploying to the NTC (Pre-NTC training) would be examined and analyzed to determine whether or not the unit was effective in the selection, conduct, evaluation and assessment of its training needs. Criteria for this examination would be developed from a comparison of critical tasks performed at the NTC and a unit training model extrapolated from relevant FORSCOM/TRADOC training policies and publications. Data gathered after the unit redeploys from the NTC (Post-NTC training) would be examined and analyzed to determine if the unit is effectively evaluating, assessing, and integrating training requirements, based on its NTC performance, to improve the overall combat readiness of the unit.

The measurement system that would be used to assess the performance of units at the NTC would depend upon the availability of the results from a related research effort (Forsythe, 1985). If the efforts on that activity result in the development of an NTC measurement system in time to meet the analysis requirements of this task, then that measurement system would be used to determine NTC performance outcomes. If such a measurement system was still in the developmental stage, then it would be necessary to utilize existing measurement systems such as that used by Shackelford (1985) in "Lessons from NTC". Designing an NTC performance measurement system solely for this task would be an option, but not one which would be considered as cost effective.

TASK 4 - Prepare Reports

As a result of this effort the following reports would be prepared:

A Methodology for Evaluating Home Station Training in the Context of NTC Preparatory and Follow-on Training

A complete report of the comprehensive data collection effort with correlational analysis of home station factors and NTC performance on eight to twelve units that trained at the NTC.

A set of guidelines for training type, echelon, frequency, and sequencing to enable a unit to profit from the NTC experience.

The set of guidelines is seen as particularly beneficial for Home Station units and would be designed for use by designated division and battalion training officers.

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